

What is claimed is:

1. A method of forming an interconnect in a substrate which includes one or more dielectric layers and a copper deposit, said method comprising:
forming a trench in the substrate; forming a via in the substrate to the copper
5 deposit; depositing a layer of aluminum-0.5% copper alloy in the trench and via
and on the copper deposit; depositing copper onto the aluminum-0.5% copper
alloy; and polishing the copper.
2. A method as recited in claim 1, wherein the step of depositing a
10 layer of aluminum-0.5% copper alloy comprises depositing the aluminum-0.5%
copper alloy using a PVD technique.
3. A method of forming an interconnect in a substrate which includes one or more dielectric layers and a copper deposit, said method comprising:
15 forming a trench in the substrate; forming a via in the substrate to the copper
deposit; depositing an intermediate liner layer in the trench and via and on the
copper deposit; depositing a layer of aluminum-0.5% copper alloy on the
intermediate layer; and polishing the copper.

4. A method as recited in claim 3, wherein the step of depositing a layer of aluminum-0.5% copper alloy comprises depositing the aluminum-0.5% copper alloy using a PVD technique.

5 5. A method as recited in claim 3, wherein the step of depositing an intermediate liner layer comprises depositing Ta/TaN.

6. An interconnect in a substrate which includes one or more dielectric layers, said interconnect comprising a first copper deposit, a second copper
10 deposit, and an aluminum-0.5% copper alloy interconnect liner disposed between the first and second copper deposits and between the second copper deposit and at least one of the dielectric layers.

7. An interconnect as recited in claim 6, wherein the aluminum-0.5%
15 copper alloy interconnect liner has been deposited using a PVD technique.

8. An interconnect in a substrate which includes one or more dielectric layers, said interconnect comprising a first copper deposit, a second copper deposit, an intermediate interconnect liner disposed between the first and second copper deposits; and an aluminum-0.5% copper alloy interconnect liner disposed
5 between the first and second copper deposits and between the second copper deposit and at least one of the dielectric layers.

9. An interconnect as recited in claim 8, wherein the aluminum-0.5% copper alloy interconnect liner has been deposited using a PVD technique.

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10. An interconnect as recited in claim 8, wherein the intermediate interconnect liner comprises Ta/TaN.